



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,343	06/02/2006	Hirofuma Fujimaru	0075868-000097	5041
21839 7590 05/18/2011 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER				
SASTRI, SATYA B				
ART UNIT		PAPER NUMBER		
1762				
NOTIFICATION DATE		DELIVERY MODE		
05/18/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com  
offserv@bipc.com

# Office Action Summary

**Application No.**

10/581,343

**Applicant(s)**

FUJIMARU ET AL.

**Examiner**

SATYA B. SASTRI

**Art Unit**

1762

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2010.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,9 and 11-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 14 is/are allowed.  
6) ☒ Claim(s) 1-7,9,11-13,15-22 and 24 is/are rejected.  
7) ☒ Claim(s) 23 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/8/2010  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☒ Other: JP02178332 A (DERWENT Ab.)

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/14/11 has been entered. Claims 1-7, 9, 11-24 are now pending in the application.

### ***Previously Cited Statutes***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, given that the claim recites that the polyvalent metal compound is in the form of a slurry or a powder, it is unclear as to what the limitation "said polyvalent metal compound concentration of not less than 50%" implies if the polyvalent metal is in powder form.
4. Claims 1-7, 9, 15, 16, 17, 18, 19, 20, 21, 22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajikawa et al. (US 2003/0020199 A1).

Kajikawa et al. disclose a continuous method of producing surface modified water absorbent resin powder comprising the step of polymerizing acrylic acid salts of alkaline metals, such as sodium, potassium, lithium and aluminum salts and amine salts of acrylic acid. Disclosed extent of neutralization ranges between 30 to 100 mole% [ab., 0148]. Specific examples of internal crosslinking agents include bis(meth)acrylamides and poly(meth)acrylates useable in amounts of 0.001 to 2 mol% [0152]. The crosslinked polymer is pulverized to particle size ranging between 300 to 600  $\mu\text{m}$  (working examples, [0073-0074]. The prior art further teaches surface crosslinking with crosslinking agents and/or surface coating with water-insoluble fine particles as favorable methods of surface modification of the water absorbent resin powder [0167-0169]. The surface coating with inert inorganic fine particles may be used with or without surface crosslinking [0185]. Disclosed insoluble fine particles include silicon oxide, in amounts not larger than 10 parts by wt., per 100 parts of the water absorbing agent powder, so as to improve the blocking resistance and water permeability of the absorbent resin powder. The blending of the fine particles with the resin may be accomplished by dry blending or slurry-blending. [0187]. The disclosed water absorbent resin powder has good absorption capacity with and without load and is widely used for agricultural and horticultural purposes [0070].

The prior art fails to disclose water retaining material comprising (a) carboxylic group-containing water-insoluble neutralized by a monovalent counter ion in presently claimed range, (b) polyvalent metal compound having solubility within the presently claimed range and (c) absorption capacity/calcium gradual release index as presently claimed.

With regard to (a), the prior art discloses a broad range of 30 to 100 mole% of neutralization with a monovalent counterion. Given the generic teaching, it would have been

obvious to one of ordinary skill in the art to neutralize the acid groups to any amount with the disclosed range, including in amounts that fall within the scope of the present invention. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). See MPEP § 2144.05.

With regard to (b), it is noted that the instant specification provides concrete examples of polyvalent metal compound (B) having scanty solubility in water. Disclosed compounds include silicon oxide [0063, PGPUB] which is also disclosed in the prior art as insoluble fine particles for surface coating.

With regard to (c), the CRC value for a 0.90 mass % physiological saline is not less than 25g/g [0076]. Although the absorption capacity for 10 min. or calcium gradual release index values are not disclosed, given that the claimed compositional requirements are obviated by the prior art, it would have been obvious to one of ordinary skill in the art that the disclosed compositions that overall in scope with the claimed invention must necessarily have the property within the presently claimed range, absent evidence to the contrary. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons herewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

With regard to claim 16, the prior art discloses a water extractable content of not more than 25 mass%, and more favorably, not more than 10 mass% from the standpoint of gel stability [0078].

With regard to claims 9 and 19, the prior art teaches optional addition of up to 10 mass% of water to the surface modified absorbent resin powder [0188].

With regard to claim 18, given that the polyvalent metal compound may be admixed in slurry form with the resin, the water content in the slurry would influence the surface coating process and is a result effective variable that would affect the type of product obtained. Likewise, the amount of the water absorbent material to be admixed in with a carrier as recited in instant claim 22 would depend on the type of plant and may be optimized depending on end user requirements. See MPEP § 2144.05 (B). Case law holds that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

5. Claims 1-7, 9, 11-13, 15-22, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajikawa et al. (US 2003/0020199 A1) in view of JP02178332 A (DERWENT Ab.)

The discussion with regard to Kajikawa et al. above in paragraph 4 is incorporated herein by reference.

The prior art fails to disclose compositions comprising presently recited polyvalent metal compounds.

It is noted that the primary reference is open to further modification of surface modified water absorbent resin powder, with additives such as salts. Secondary reference is in a related field of water absorbent resin powder for use in sanitary goods as well as for agricultural and gardening purposes. The reference teaches that an antistatic treatment of the resin powder with inorganic powders such as calcium sulphate and calcium hydroxide can prevent dust explosion in

air transportation, adhesion to packaging bag and damage of manufacturing apparatus due to electrical discharge. Thus, it would have been obvious to one of ordinary skill in the art to utilize calcium sulphate and calcium hydroxide with inorganic fine particles during surface coating processes of Kajikawa et al.

### ***Allowable Subject Matter***

6. Claim 14 is allowed.

Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Presently cited claims are allowable over closest prior art of record that does not teach polyvalent metal compound as an ash of incineration.

### ***Response to Arguments***

7. In view of the amendment and arguments, all previously set forth rejections are withdrawn. Applicant's arguments have been fully considered but are deemed moot in view of new grounds of rejection set forth herein.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Satya Sastri at (571) 272 1112. The examiner can be reached on Mondays, Thursdays and Fridays, 7AM-5.30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Wu can be reached on 571-272-1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Satya B Sastri/

Primary Examiner, Art Unit 1762